

## EXHIBIT A

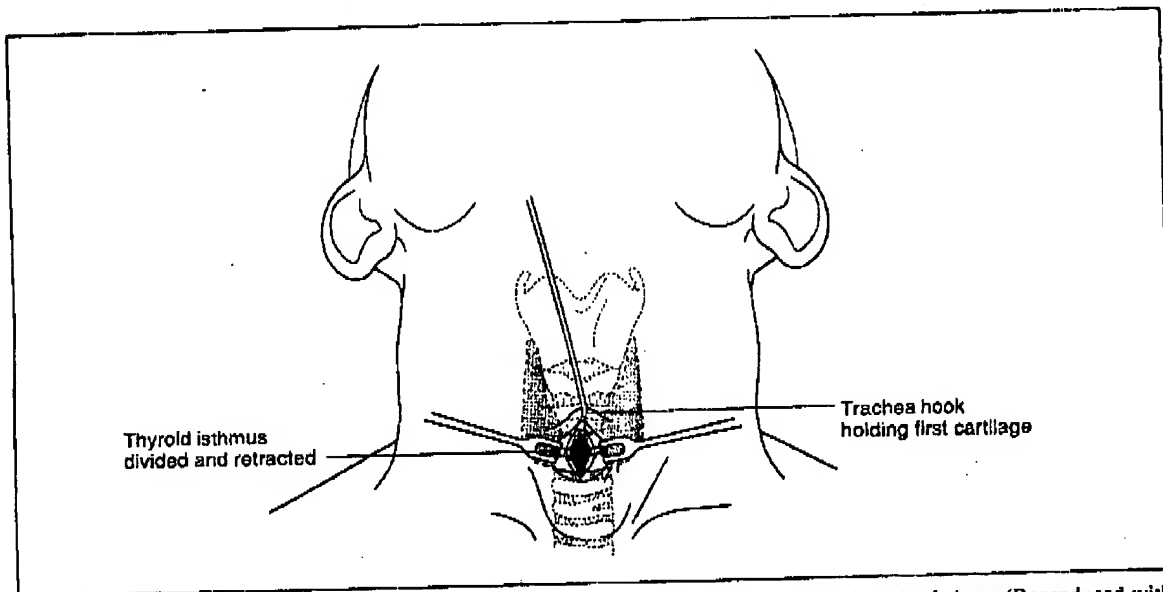
## TRACHEOSTOMY

### SURGICAL CONSIDERATIONS

**Description:** Tracheostomy is performed either prophylactically in anticipation of upper airway obstruction due to major head and neck surgery, or to establish an airway in acute infectious processes of the head and neck associated with airway obstruction. Other indications are: laryngeal fractures, sleep apnea, inability to intubate for various reasons, requirements for prolonged ventilatory assistance, etc. A tracheostomy tube is placed, or a permanent tracheostomy can be fashioned by using interdigitating neck skin flaps and tracheal flaps. Rarely, an ETT may serve as a tracheostomy securing an airway. Tracheostomy under local anesthesia is the preferred technique for anyone with upper airway obstruction. After infiltrating the operative site with 1% lidocaine, with 1:100,000 epinephrine, a horizontal incision is made 1 cm below the cricoid, exposing the strap muscles, which are separated in the midline. The thyroid isthmus is encountered and divided with electrocautery. The pretracheal fascia is removed (Fig 3-9), and the cricoid cartilage identified. The trachea is entered, usually at the 2nd or 3rd ring, with either a horizontal or cruciate incision, or a segment of tracheal wall may be removed. In infants, a vertical incision is used with stay sutures attached to each flap. The tracheostomy tube is introduced and secured with trach ties and/or sutures.

**Variant procedure or approaches:** Cricothyroidotomy (incision placed just over the cricothyroid membrane into the subglottic larynx) is the preferred technique to obtain a rapid airway in an emergency. Conversion to a conventional tracheostomy should be performed either immediately or within the first 24 h to prevent development of cricoid cartilage chondritis with resultant subglottic stenosis.

**Usual preop diagnosis:** Acute upper airway obstruction; respiratory failure with ventilator dependence



**Figure 3-9.** Standard tracheostomy using a vertical incision through the second and third tracheal rings. (Reproduced with permission from Greenfield LJ, et al, eds: *Surgery: Scientific principles and Practice*, 2nd edition. Lippincott-Raven, Philadelphia: 1997, 143.)

### SUMMARY OF PROCEDURE

	Tracheostomy	Cricothyrotomy
Position	Supine; head extended; sandbag under shoulder, if tolerated.	⇐
Incision	Transverse skin crease, midway between thyroid notch and suprasternal notch	Transverse skin crease between thyroid and cricoid cartilage
Special instrumentation	None	Cricothyrotome or minitracheostomy set